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專利名稱：可偵測滲漏之水管

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申請專利範圍：

1. 一種可偵測滲漏之水管，包括：

一管體，用以裝載一液體；

一保護套管，披覆於該管體上；以及

一偵測裝置，設置於該管體與該保護套管之間，以在該管體滲漏出該液體時輸出一觸發信號。

2. 如申請專利範圍第 1 項所述之可偵測滲漏之水管，更包括一警示裝置，電性連接於該偵測裝置，用以在接收該觸發信號後發出警訊。

3. 如申請專利範圍第 1 項所述之可偵測滲漏之水管，其中該管體具有可撓性。

4. 如申請專利範圍第 1 項所述之可偵測滲漏之水管，其中該管體係一金屬管體。

5. 如申請專利範圍第 1 項所述之可偵測滲漏之水管，其中該液體係一冷卻水。

6. 如申請專利範圍第 1 項所述之可偵測滲漏之水管，其中該保護套管係熱縮套管及鐵氟龍套管之

任一種。

7.如申請專利範圍第 1 項所述之可偵測滲漏之水管，其中該偵測裝置包括：

兩導線，彼此並未電性接觸；以及

一絕緣膜，披覆於該等導線上，其中該絕緣膜具有至少一缺口，以部分露出任一該等導線；當滲漏出之該液體與部分露出之該等導線接觸時，該等導線彼此電性導通而輸出該觸發信號。

8.如申請專利範圍第 2 項所述之可偵測滲漏之水管，其中該警示裝置係一顯示器、一警示燈及一蜂鳴器之任一種。

9.如申請專利範圍第 7 項所述之可偵測滲漏之水管，其中該絕緣膜係由鐵氟龍所製成。

10.一種可偵測滲漏之水管，包括：

一金屬管體，用以裝載供作冷卻之一液體；

一保護套管，被覆於該金屬管體上，用以防止該金屬管體受到腐蝕；

兩導線，設置於該金屬管體與該保護套管之間，其中該等導線彼此並未電性接觸；

一絕緣膜，披覆於該導線上，其中該絕緣膜具有至少一缺口以部分露出任一該等導線，當滲漏出之該液體與部分露出之該等導線接觸時，該等導線彼此電性導通而輸出一觸發信號；以及一警示裝置，用以接收該觸發信號而發出警訊。

11.如申請專利範圍第 10 項所述之可偵測滲漏之水管，其中該金屬管體具有可具有撓性。

12.如申請專利範圍第 10 項所述之可偵測滲漏之水管，其中該液體係一冷卻水。

13.如申請專利範圍第 10 項所述之可偵測滲漏之水管，其中該保護套管係熱縮套管及鐵氟龍套管之任一種。

14.如申請專利範圍第 10 項所述之可偵測滲漏之水管，其中該絕緣膜係由鐵氟龍所製成。

15.如申請專利範圍第 10 項所述之可偵測滲漏之水管，其中該警示裝置係一顯示器、一警示燈及一蜂鳴器之任一種。

What is claimed is:

1. A leakage detectable tube, comprising:

a tubal body used to deliver a solution;

5 a protecting tubing covering the tubal body; and

 a detecting device installed between the tubal body and the protecting tubing to send a trigger signal while the solution leaking from the tubal body.

2. The leakage detectable tube according to claim 1, further comprises a warning

10 device electrically connected to the detecting device, wherein the warning device is used to send a warning signal after receiving the trigger signal.

15 3. The leakage detectable tube according to claim 1, wherein the tubal body is bendable.

4. The leakage detectable tube according to claim 1, wherein the tubal body is a metal tubal body.

20 5. The leakage detectable tube according to claim 1, wherein the solution is pure cooling water.

25 6. The leakage detectable tube according to claim 1, wherein the protecting tubing is selected from the group consisting of a heat shrinkable cross-linked polyolefin tubing and a Teflon tubing.

7. The leakage detectable tube according to claim 1, wherein the detecting device comprises:

two conductive lines which are not electrically connected mutually; and

an insulating film covering the conductive lines, wherein the insulating film has

5 at least one breach to expose a portion of each the conductive lines,

while the solution in leaking contacting the exposed conductive lines, the conductive lines are electrically connected with each other to send the trigger signal.

8. The leakage detectable tube according to claim 2, wherein the warning device

10 is selected from the group consisting of a display, a warning lamp, and a buzzer.

9. The leakage detectable tube according to claim 7, wherein the insulating film is made of Teflon.

15 10. A leakage detectable tube, comprising:

a metal tubal body used to deliver a solution for cooling;

a protecting tubing covering the metal tubal body used to prevent the metal tubal body from corroding;

20 two conductive lines installed between the metal tubal body and the protecting tubing, wherein the conductive lines are not electrically connected mutually;

an insulating film covering the conductive lines, wherein the insulating film has at least one breach to expose a portion of each the conductive lines, while the solution in leaking contacting the exposed conductive lines, the conductive lines are electrically connected with each other to send the trigger signal; and

25 a warning device used to receive the trigger signal to send a warning signal.

11. The leakage detectable tube according to claim 10, wherein the metal tubal body is bendable.

5 12. The leakage detectable tube according to claim 10, wherein the solution is pure cooling water.

13. The leakage detectable tube according to claim 10, wherein the protecting tubing is selected from the group consisting of a heat shrinkable cross-linked polyolefin
10 tubing and a Teflon tubing.

14. The leakage detectable tube according to claim 10, wherein the insulating film is made of Teflon.

15 15. The leakage detectable tube according to claim 10, wherein the warning device is selected from the group consisting of a display, a warning lamp, and a buzzer.